Claims

1. Recombinant kinase remaining stable during the synthesis of nucleoside monophosphate without the addition of stabilizing SH reagents, without stabilizing proteins and accepting all four natural deoxynucleosides, obtainable from cells of nonvertebrate organisms.

2. Recombinant kinase as claimed in claim 1 obtainable from insect cells.

3. Recombinant kinase as claimed in claim 1 or 2 showing - in a purified form - a specific activity of at least 20 U/mg (1U = 1µmol/min) for all 4 natural deoxynucleosides.

4. Recombinant kinase as claimed in one of the claims 1 to 3 showing a specificity constant k_c/K_m of > 10000 M^{-1} s^{-1} for all natural deoxynucleosides.

5. Recombinant kinase as claimed in one of the claims 1 to 4 where the kinase has a half-life of $t_{1/2} \geq 50$ h in Tris buffer with 5 mM $MgCl_2$ and of $t_{1/2} \geq 25$ h in water at 37°C.

6. Recombinant kinase as claimed in one of the claims 1 to 5 showing a wide temperature optimum between 40 and 60°C.

7. Recombinant kinase as claimed in one of the claims 1 to 6, obtainable from Drosophila Melanogaster.

8. DNA sequence encoding a kinase from Drosophila Melanogaster as claimed in one of the claims 1 to 7.

9. DNA sequence as claimed in claim 8 wherein primers with the sequences SEQ ID No. 2 – 8 hybridize onto this DNA sequence.

10. Vector containing the DNA sequence as claimed in claim 8 or 9 and a promoter.

11. Host transformed with a vector as claimed in claim 10.

12. Method for production of a recombinant kinase as claimed in one of the claims 1 to 7, wherein the following steps are performed:

1) isolation of the coding sequence of Dm-dNK,
2) cloning of the structure gene in preferred expression vectors for E. coli with inducible promoters,
3) transformation of the expression vectors in preferred E. coli host strains and
4) expression of the Dm-dNK gene in E. coli by appropriate induction.

13. Use of a recombinant kinase obtainable from Drosophila Melanogaster as claimed in one of the claims1 to 7 for the synthesis of the nucleoside monophosphate.

14. Method for production of a nucleoside monophosphate wherein a recombinant kinase as claimed in claims 1 to 7 is used for the phosphorylation of a nucleoside.